

REMARKS/ARGUMENTS

Claims 1-7 are pending. By this Amendment, the Specification and Claims 1 and 4 are amended, and Claims 8-17 are cancelled as being drawn to a non-elected invention. Reconsideration in view of the above amendments and the following remarks is respectfully requested.

Claim 1 is amended to introduce the limitation that the pores are coalesced such that the walls are formed between adjacent pores and that in at least some of which walls windows are formed to allow fluid communication between adjacent pores. Support for this amendment may be found throughout the Specification as filed and in particular at Paragraphs [0013] to [0018] of the published Application and in Figure 1. For example, Figure 1 clearly shows the pores as being coalesced to such a point as that the walls between them are shared and that windows are formed in the walls so that these windows open directly between one pore and the other.

Claim 4 is amended to read that the porosity of the porous bodies exceeds 75% so that substantially all of the pores are interconnected. Support for this amendment may be found in the original Claim 4 and in paragraph [0007] of the specification as published. For example, original Claim 4 required that the porosity of the porous bodies exceed 75% so that the pores are all interconnected. The skilled person would have understood that this level of porosity leads to a completely open-cell structure, i.e. that each of the pores is in fluid communication (or connected with) at least one other. This skilled artisan also would have understood that although such a structure may be referred to as *completely* open-cell, there may be a very small percentage of pores which are not connected to any others. He would therefore have understood that while paragraph [0007] and original Claim 4 refer to the pores being all interconnected, this would

encompass a porous body with a very small percentage of closed pores.

It is therefore submitted that no new matter is added by the entry of this amendment.

ELECTION/RESTRICTIONS

In response to the Examiner's Restriction Requirement, Applicant affirms the election of Group I, Claims 1-7, drawn to a method of treating a process stream. The election is made without traverse. In view of the Examiner's earliest Restriction Requirement, Applicant retains the right to present non-elected Claims 8-17 in a divisional application.

FORMAL MATTERS

The disclosure stand rejected to because Page 3 of the specification, bottom line, has text which is clipped. By this amendment, Applicant corrects the clipped paragraph by amendment with the original paragraph in unclipped form. Withdrawal of the objection is respectfully requested.

The Examiner requests a copy of an article referenced in the specification for consideration and placement in the application file. Accordingly, Applicant files herewith an Information Disclosure Statement presenting the non-patent literature publication inadvertently omitted from the previously Information Disclosure Statement, filed August 18, 2006 with the application. Applicant respectfully requests that the information be expressly considered during the prosecution of this application, and that the reference be made of record therein.

35 U.S.C. §112 REJECTIONS

Claim 4 stands rejected under 35 U.S.C. §112, first paragraph. This rejection is respectfully traversed for at least the reasons set forth below.

The Examiner asserts that the specification does not reasonably provide enablement for the claimed term “the pores are all interconnected”. Applicant respectfully submits that a skilled artisan at the time of the invention would have understood that although a porous structure may be referred to as having pores that are all interconnected, there may be a very small percentage of pores which are not connected to any others. This person of ordinary skill in the art therefore would have understood that the original Claim 4 does not require that every single pore be connected with at least one other, rather that a more or less negligible number of pores may be closed. Nevertheless, in the interest of expediting prosecution of this application, Claim 4 is amended to recite that substantially all of the pores are interconnected.

As the Examiner concedes in paragraph 7 of the office action, the alleged lack of enablement of original Claim 4 extends only so far as the requirement that all (i.e., each and every one) of the pores be interconnected. Applicant respectfully submits that the present amendment to Claim 4 makes clearer that this is not the sole thrust of the claim and that the rejection is therefore overcome. Withdrawal of the rejection is respectfully requested.

Claim 5 stands rejected under 35 U.S.C. §112, first paragraph. This rejection is respectfully traversed for at least the reasons set forth below.

The Examiner asserts that the specification does not reasonably provide enablement for the claimed term “the density of the body ranges from about 10% to about 30% of theoretical

density”. Applicant respectfully traversed the Examiner’s assertion and submits that it is commonplace in the art to express the porosity of a body by referring to its density as a percentage of the “theoretical density” of the material from which the body is formed, which is effectively its inverse.

The theoretical density, as the skilled artisan would have understood, is the density of the material in question. If the body in question has a porosity of 30%, it may thus be described as having a density of 70% of the theoretical density of the material from which it is made. This experimentation is routine and requires no capacity for inventive or abstract thought. It is therefore submitted that the term “the density of the body ranges from about 10% to about 30% of theoretical density”, as used in Claim 5, is fully enabled by the specification as filed, and would be understood by the skilled person to relate to an article having 90% to 70% porosity.

Moreover, the calculation of the density of a given body as a percentage of theoretical density of the material from which it is made would have been self-evident to a person of ordinary skill in the art at the time of the invention. It is axiomatic that the skilled person understands that the density of a body is equal to its mass divided by its volume, which can be calculated by performing a simple measurement. All that would remain is to compare the figure obtained to that provided as the theoretical density from a reliable source of such data.

Accordingly, Applicant respectfully submits that the specification clearly enables any person skilled in the art to practice the invention commensurate in scope with the claims. Withdrawal of the rejection under 35 U.S.C. §112, first paragraph, is respectfully requested.

35 U.S.C. §102 REJECTION

Claims 1-4 and 6 stand rejected under 35 U.S.C. §102(a) over Ajisaka, et al. (WIPO Publication No. WO03/071106 and U.S. Patent Publication No. 2005/0147541). This rejection is respectfully traversed for at least the reasons set forth below.

The Examiner asserts that Ajisaka discloses the features of the rejected claims. Ajisaka describes a particulate filter for a diesel engine, which filter may contain a metal catalyst. The filter is made up of porous ceramic particles (paragraph [0016] of US541) having around 70% to 80% porosity (see paragraph [0065]). However, the porous bodies described by Ajisaka do not comprise pores defined by struts and walls, the pores being coalesced such that the walls are formed between adjacent pores, in at least some of which walls are formed windows to allow fluid communication between adjacent pores, as recited in Claim 1.

Figure 3, for example, demonstrates that the porous structure of the porous bodies of Ajisaka consist of spherical pores 2 of a similar size, connected by relatively long channels 3. These are, as noted at paragraph [0013] of the application as published, characteristics of a reticulated porous structure and not a structure comprising pores defined by struts and walls in at least some of which windows are formed to allow fluid communication between adjacent pores. In particular, the channels described by Ajisaka (see paragraph [0018] of US541)) cannot be regarded as “windows” within the terms of Claim 1.

The claimed term “window”, as would have been understood by one skilled in the art, refers to an aperture directly between the pores. In fact, the description at paragraph [0013] describes the windows as exactly that. The term “channel”, as used by Ajisaka, bestows a certain length to the join between the pores that is not carried by the term “aperture”. This is

displayed in, for example, Figure 3 of Ajisaka where the channels 2 appear approximately equal in length to the radius of the pores 2.

The porous structure required by the present Claim 1 provides certain marked advantages over the reticulated porous structure provided by Ajisaka. Notably, the pore structure of Claim 1 provides extremely efficient filtration, without suffering from the blockages caused by particles caught in the channels of a reticulated structure. Moreover, an increased flow rate of fluid, producing a much reduced back-pressure, is possible through the pore structure of Claim 1 as compared to that provided by Ajisaka, where the long and narrow channels provide flow restrictions and turbulence.

Further, Applicant respectfully submits that Ajisaka provides no motivation for the skilled person to examine any other porous structure than the one described – no other structures are disclosed or considered and, in fact, (and as shown at paragraphs [0016], [0017], [0065] and in Claim 1) the communication channels between the pores are at the heart of Ajisaka's disclosure.

Applicant therefore submits that Claim 1 is both novel and non obvious in view of Ajisaka. Moreover, Claims 2 to 4 and 6 are dependent upon, and incorporate all of the features of, Claim 1 and are therefore also novel and non obvious in view of Ajisaka. Withdrawal of the rejection of Claims 1-4 and 6 is respectfully requested.

35 U.S.C. §103 REJECTIONS

Ajisaka

Claim 5 stands rejected under 35 U.S.C. §102(a) or 103(a) over Ajisaka. This rejection is respectfully traversed for at least the reasons set forth below.

The Examiner asserts that Ajisaka teaches the bulk relative density of which is between 0.1 and 0.3. However, as discussed above, Ajisaka does not disclose pores defined by struts and walls, the pores being coalesced such that the walls are formed between adjacent pores, and at least some of which walls are formed windows to allow fluid communication between adjacent pores, as recited in Claim 1. Applicant further submits that Ajisaka does not teach or suggest this feature of Claim 1, from which Claim 5 depends. Therefore, Applicant respectfully submits that Ajisaka or a combination of Ajisaka and the knowledge of a skilled artisan would not have resulted in the above-discussed features of Claim 1, from which Claim 5 depends. Withdrawal of the rejection of Claim 5 under 35 U.S.C. §102 or 103 is respectfully requested.

Ajisaka, Wade and Bly

Claim 7 stands rejected under 35 U.S.C. §103(a) over Ajisaka in view of Wade (U.S. Patent No. 4,641,496) and Bly (U.S. Patent No. 4,276,066). This rejection is respectfully traversed for at least the reasons set forth below.

The Examiner admits that Ajisaka does not teach that the porous ceramic bodies are held in a rotating wheel or slide configuration, and asserts that it would have been obvious to combine the teachings of Bly and Wade of a moving member for blocking part of the ceramic filter element for regeneration purposes to reverse the operation of the device and rotate the filter member in front of a stationary blocking shield. However, neither Wade nor Bly teach or suggest pores defined by struts and walls, the pores being coalesced such that the walls are formed between adjacent pores, and at least some of which walls are formed windows to allow fluid communication between adjacent pores, as recited in Claim 1, and missing in Ajisaka.

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Therefore, a combination of Ajisaka, Wade and Bly would not have resulted in the above-discussed features of Claim 1, from which Claim 7 depends. Therefore, the references do not render Claim 7 obvious. Withdrawal of the rejection of Claim 7 under 35 U.S.C. §103(a) is respectfully requested.

CONCLUSION


For at least the reasons set forth above, it is respectfully submitted that the above-identified application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are respectfully requested.

Should the Examiner believe that anything further is desirable in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

CAESAR, RIVISE, BERNSTEIN,
COHEN & POKOTILOW, LTD.

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By 

Michael J. Cornelison
Registration No. 40,395
Customer No. 03000
(215) 567-2010
Attorneys for Applicant

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